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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,481	08/29/2001	Ricardo Cozar	212868US0X CONT	5253

22850 7590 09/23/2002

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EXAMINER

IP, SIKYIN

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 09/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

Applicant(s) M

Examiner

Group Art Unit

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 7/8/02
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-19 is/are pending in the application.  
Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-19 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
  - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:  
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
2. Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
3. Claims 1-19 contain different martensitic transformation start points. But the specification as originally filed fail to disclose how the recited martensitic transformation start points and thermal coefficient of expansion are being controlled or related to the claimed compositions and recited equations. It is unclear why the examples (A to D) in pages 6-7 of the instant specification have different martensitic transformation start points and thermal coefficients of expansion since compositions of all examples are in the claimed ranges and also complied with the claimed equations. There is no teaching to obtain the martensitic transformation start points less than -186 and/or thermal coefficients of expansion  $0.49 \times 10^{-6}$  to  $0.7 \times 10^{-6}$ .

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 1 and 7-8 are indefinite because from the temperature range of 80 to 100°C there are two mean coefficients of thermal expansion. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired.

#### *Claim Objections*

7. Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
8. New claim 19 is depended on claim 20 which does not exist.

*Claim Rejections - 35 USC § 103*

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-19 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5234512 to Inoue et al in view of USP 5236522 to Fukuda et al, USP 4932908 to Ishikawa et al, or USP 5164021 to Kato et al (All references are cited in the parent application).

12. The Inoue et al reference(s) disclose(s) the features including the claimed Fe-Ni shadow mask (abstract) and the conventional shadow mask processing steps such as etching and working (col. 1, lines 47-57). The difference between the Inoue et al reference(s) and the claims are as follows: The Fe-Ni alloy of Inoue et al does not

contain Co element and Inoue et al do not disclose the claimed equation expressing the chemical composition of the alloy. However, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those ordinary skilled in the art. *In re Austin, et al.*, 149 USPQ 685, 688.

13. With respect to the Co content, Fukuda et al (col. 2, lines 51-57), Kato et al (col. 2, lines 46-50), and Ishikawa et al (col. 3, lines 24-30) teaches the benefit of adding Co to Fe-Ni shadow mask materials in the same field of endeavor or the analogous metallurgical art. Therefore, it would have been obvious to one having ordinary skill in the art of the cited references at the time the invention was made to provide Fe-Ni alloy as Inoue et al with Co element as taught by Fukuda et al (col. 2, lines 51-57), Kato et al (col. 2, lines 46-50), and Ishikawa et al (col. 3, lines 24-30) in order to improve the etching adaptability of the Fe-Ni shadow mask material. It has been held that combining known ingredient having known functions to provide a composition having the additive effect of each of the known functions is within realm

of performance of skilled artisan and is not a patentable subject matter. In re Castner, 186 USPQ 213, 217.

14. With respect to the etching step in the Inoue et al reference which is known in the art meant for drilling. See MPEP § 706.02(a); In re Malcolm, 1942 C.D. 589; 543 O.G. 440.

15. With respect to the claimed martensitic transformation starting point and the thermal expansion coefficient as recited in claims 1 and 7-8 that although the cited references do not disclose the claimed material properties; however, those properties as claimed would have been inherently possessed by the alloys of cited references because the claimed alloy composition is overlapped by the cited references as combined. The mere failure of the cited references to disclose all the advantages asserted by applicants is not substitute for actual differences in properties; see In re DeBlauwe, 222 USPQ 191, In re Best, 195 USPQ 430, and In re Swinehart, 169 USP 226. An apparently old composition cannot be converted into an unobvious one simply by the discovery of a characteristic that one cannot glean from the cited references; see Titanium Metals Corp. Vs. Banner, 227 USPQ 773, In re King et al, 43 USPQ 400, and In re James, 29 USPQ 431. It is well settled that when a claimed product appears to be substantially the same as a prior art product, the burden is on the applicant to prove that the product of the prior art does not necessarily or

inherently possess characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990); In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); and In re Fessmann, 180 USPQ 324.

### *Response to Arguments*

16. Applicant's arguments filed July 8, 2002 have been fully considered but they are not persuasive.

17. Applicants' argument in paragraph bridging pages 5-6 of the instant remarks is noted. But, it is unclear why the thermal coefficients of expansion of Groups A and B-D are different since compositions of A to D all fall in the claimed composition ranges and comply with the claimed equations.

18. Applicants' arguments as set forth in paragraph bridging pages 6-7 of the instant remarks are noted. But, the claimed martensitic transformation start point would have been inherently possessed by examples 4-7 of Fukuda because said examples contain C in the claimed amounts (see also page 5, lines 10-14 of the instant specification and instant claims 1-8).

19. With respect to the claimed thermal expansion coefficient that Fukuda discloses coefficients in Table 2, examples 4-11 which overlap the claimed thermal expansion coefficient as set forth in instant claims 1-8.



20. Applicants argue that the examples of Fukuda in Table 2 do not fall within the claimed range for thermal coefficient of expansion. But, the claimed thermal coefficient of expansion in instant claims 1-8 are overlapped by examples in Table 2 of said reference. The fact that the claimed broad ranges are disclosed by examples of said reference which would make the narrow range obvious. Furthermore, it is well settled that the examples of the cited reference are given by way of illustration and not by way of limitation. In re Boe, 148 USPQ 507 (CCPA 1966) and In re Snow, 176 USPQ 328.

21. Applicants' argument in paragraph bridging pages 6-7 of the instant remarks is noted. But applicants fail to explain how the claimed compositions and equations affect and/or control the martensitic transformation start point and thermal coefficient of expansion. Thus the compositions of cited references would not inherently possess the claimed said properties.

22. Applicants argue that Fukuda, Kato, and Ishikawa teach to contain Mn higher than 0.1 wt.% which is different from the claimed up to 0.1 wt.%. The claimed 0.1 wt.% Mn is clearly anticipated by the 0.1 wt.% as taught by said references. Furthermore, it is well settled that a prima facie case of obviousness would exist where the claimed ranges and prior art do not overlap but are close enough that one ordinary skilled in the art would have expected them to have the same properties, In

re Titanium Metals Corporation of America v. Banner, 227 USPQ 773 (Fed. Cir. 1985), In re Woodruff, 16 USPQ 2d 1934, In re Hoch, 428 F.2d 1341, 166 USPQ 406 (CCPA 1970), and In re Payne 606 F.2d 303, 203 USPQ 245 (CCPA 1979). To overcome the prima facie case, an applicant must show that there are substantial, actual differences between the properties of the claimed compound and the prior art compound. Hoch, 428 F.2d at 1343-44, 166 USPQ at 409. Applicants have not shown the claimed Mn content is critical. Unexpected results must be established by factual evidence. Mere argument or conclusory statements in the specification is not sufficient. In re Geisler, 116 F.3d at 1470.

23. Applicants argue that the Inoue does not disclose the claimed Co element. But applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

24. Applicants argue that shadow mask alloy steel of Inoue contains up to 0.005 wt.% C. But, the claimed C content is overlapped by the C content of said reference.

25. Applicants argue that the C content of Ishikawa is higher than the claimed range. But, the claimed 0.02 wt.% is anticipated by cited reference.

*Examiner Correspondence*


26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone numbers are (703) 872-9310 (non-final Official Paper only), (703) 872-9311 (after-final Official Paper only), and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

  
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**SIKYIN IP**  
**PRIMARY EXAMINER**  
**ART UNIT 1742**

**S. Ip**  
September 22, 2002